



Traffic Calming Study Lexington, Massachusetts

Presented by
Laura Castelli - VHB

May 25, 2016

Agenda

- Recap of October Meeting
- Mitigation Considerations
 - First Level Screening and Alternatives Analysis
 - Construction Mitigation

Recap of October Meeting – Primary Concerns Expressed by Neighbors

- High travel speeds on neighborhood streets
- Improper placement and/or lack of intersection control at neighborhood intersections
- Limited pedestrian accommodations
- Increase in neighborhood cut-through traffic, particularly during construction

Existing Conditions – Analysis Findings

- Travel speeds on neighborhood streets
 - 85th percentile
 - Exceeding 85th percentile
- Potential East Mass Ave project benefits/impacts
 - Reduced queuing along Mass Ave and along Pleasant Street should encourage motorists to remain on primary roadways
 - Potential increase in overall Mass Ave delay = vulnerability to Follen Road during evening peak hour
 - Vehicles headed northeast (towards Lowell St) may still utilize neighborhood(s) as cut-through during evening peak hour

Mitigation Considerations



First Level Screening

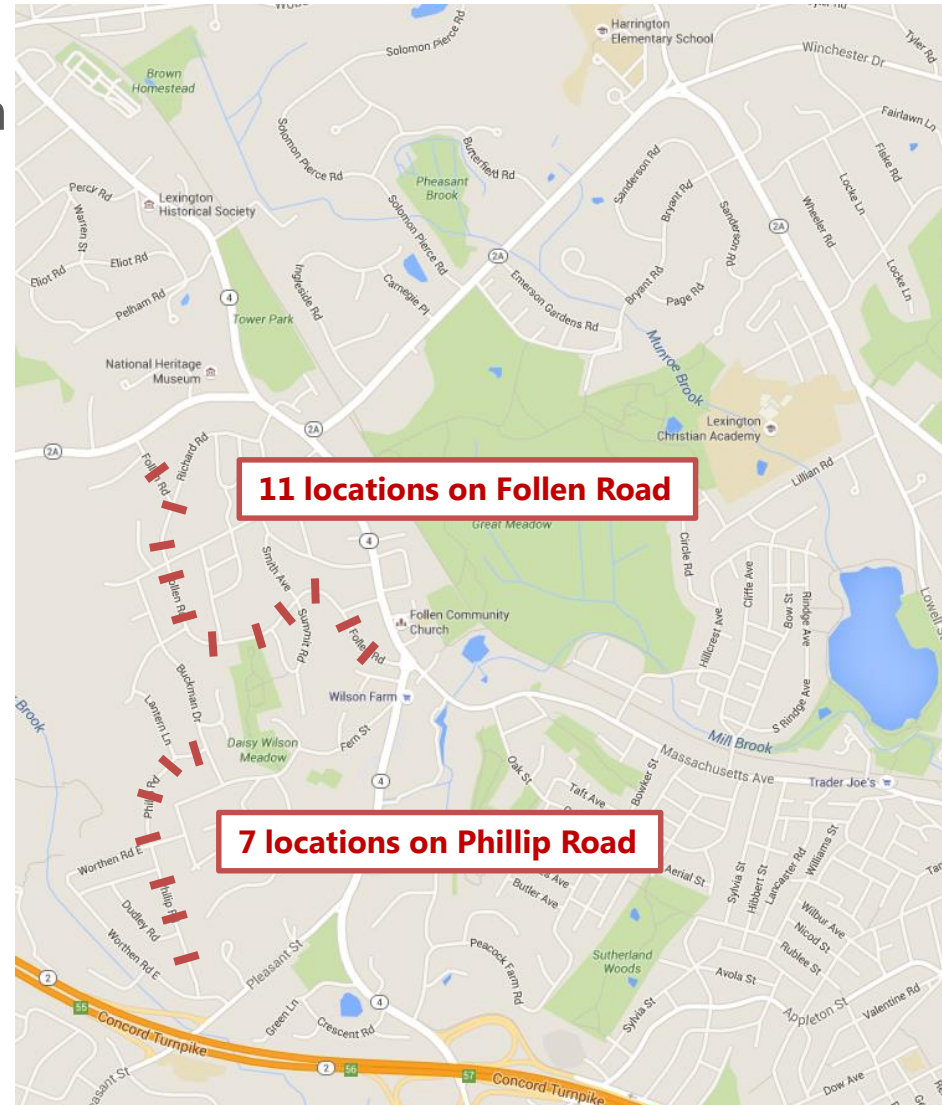
- Appropriate countermeasures were identified for implementation in the neighborhoods
- These countermeasures include:
 - Installing/relocating signage (stop signs, speed limit signs, warning signs, etc.)
 - Installing speed humps/tables or traffic circles
 - Restricting turns (on a time restricted or permanent basis)
 - Closing roads
 - Installing curb extensions/chicanes
 - Installing pedestrian accommodations

Countermeasure Matrix

	Phillip Road/Follen Road Neighborhood							Peacock Farm Road Neighborhood			Bow Street/Reservoir Neighborhood									
	Post advisory speed limit signs throughout neighborhood	Install speed humps along Phillip Road and Follen Road	Install raised intersections at five locations on Phillip Road and Follen Road	Install traffic circles at two locations on Follen Road	Install "Do Not Enter" signs, with weekday morning peak period time restrictions, at Follen Road and Tower Road	Install "Do Not Enter" signs, with weekday evening peak period time restrictions, at Follen Road and Worthington Road	Close Follen Road at Pleasant Street creating a cul-de-sac	Post advisory speed limit signs throughout neighborhood	Install "Do Not Enter" signs, with weekday evening peak period time restrictions, at Peacock Farm Road	Install a four-way stop at the intersection of Baker Avenue/Oak Street	Post advisory speed limit signs throughout neighborhood	Install speed humps along Bow Street	Install a raised intersection at Bow Street/Winn Avenue	Install a four-way stop at the intersection of Rawson Avenue/Albermarle Avenue	Install "Do Not Enter" signs, with weekday morning peak period time restrictions, at Lillian Road	Install "Do Not Enter" signs, with weekday evening peak period time restrictions, at Fottler Avenue and Bow Street	Relocate the westbound approach stop sign at the intersection of Bow Street/Rawson Road	Reduce turn radii at two locations	Install crosswalks at the intersection of Fottler Avenue/Hillcrest Avenue/Theresa Avenue	Create pedestrian waiting area at the intersection of Fottler Avenue/Hillcrest Avenue/Theresa Avenue
<div>✓</div> Positive Impact <div>●</div> Neutral Impact <div>✗</div> Negative Impact																				
Mobility																				
Impact to residential access	●	●	●	●	✗	✗	✗	●	✗	●	●	●	●	●	✗	✗	●	●	●	●
Impact to school and/or church access	●	●	●	●	✗	✗	✗	●	●	●	●	●	●	●	●	●	●	●	●	●
Diversion of traffic to other neighborhood streets	●	●	●	●	✗	✗	✗	●	●	●	●	✗	●	●	●	●	●	●	●	●
Safety																				
Reduce vehicular travel speeds	●	✓	✓	✓	●	●	●	●	●	●	●	✓	✓	●	●	●	●	✓	●	●
Reduce vehicular "cut-through" traffic	●	✓	✓	●	✓	✓	✓	●	✓	●	●	✓	✓	●	✓	✓	●	●	●	●
Increase awareness of speed limit	✓	●	●	✓	●	●	●	✓	●	●	✓	●	●	●	●	●	●	●	●	●
Increase awareness of intersection	●	●	✓	✓	●	●	●	●	●	✓	●	●	✓	✓	●	●	✓	●	●	●
Increase awareness of non-motorist crossings	●	●	✓	✓	●	●	●	●	●	●	●	●	✓	●	●	●	●	●	✓	●
Impact to emergency vehicle access	●	✗	✗	✗	●	●	✗	●	●	●	●	✗	✗	●	●	●	●	●	●	●
Geometric																				
Impact to drainage	●	✗	✗	●	●	●	●	●	●	●	●	✗	✗	●	●	●	●	●	●	●
Impact to maintenance activities	●	✗	✗	✗	●	●	●	●	●	●	●	✗	✗	●	●	●	●	●	●	✗
Impact to parking	●	✗	●	●	●	●	●	●	●	●	●	✗	●	●	●	●	●	●	●	●
Impact to property	●	●	✗	●	●	●	●	●	●	●	●	●	✗	●	●	●	●	●	●	✗
Environmental																				
Reduce noise	●	✗	✗	●	✓	✓	✓	●	✓	✗	●	✗	✗	✗	✓	✓	●	●	●	●
Reduce air pollution	●	●	●	●	✓	✓	✓	●	✓	✗	●	●	●	✗	✓	✓	●	●	●	●
Schedule (months) includes public process, design and construction	1-3	18+	18+	18+	3-6	3-6	12+	1-3	3-6	3-6	1-3	3-6	18+	3-6	3-6	3-6	1-3	3-6	6-12	6-12
Cost	\$	\$\$\$	\$\$\$	\$\$\$	\$	\$	\$\$\$	\$	\$	\$	\$	\$	\$\$\$	\$	\$	\$	\$	\$	\$	\$

Speed Limit Signs and Speed Humps

- Post speed limit signs of 30 mph at select locations (advisory)
- Install speed humps
 - approximately 400-foot intervals
 - midpoint travel speed of 25 mph (design speed)
 - Can reduce vehicular speeds and vehicular “cut-through” traffic
 - May impact drainage, maintenance activities, property, emergency vehicle access, and increase noise
 - Locations not finalized



Follen Road Marrett Road to Locust Avenue




Follen Road Locust Avenue to Lexington Avenue



Follen Road Lexington Ave to Gibson Road

LEGEND

 PROPOSED SPEED HUMP

NOTES:

1. SPEED HUMPS AT APPROXIMATELY 400' INTERVALS
2. POSTED SPEED LIMIT OF 30 MPH



Follen Road Gibson Road to Mass Ave



LEGEND

 PROPOSED SPEED HUMPS

NOTES:

1. SPEED HUMPS AT APPROXIMATELY 400' INTERVALS
2. POSTED SPEED LIMIT OF 30 MPH

Phillip Road Buckman Drive to Worthern Road

LEGEND

 PROPOSED SPEED HUMP

NOTES:

1. SPEED HUMPS AT APPROXIMATELY 400' INTERVALS
2. POSTED SPEED LIMIT OF 30 MPH



Phillip Road Worthern Road to Goffe Road

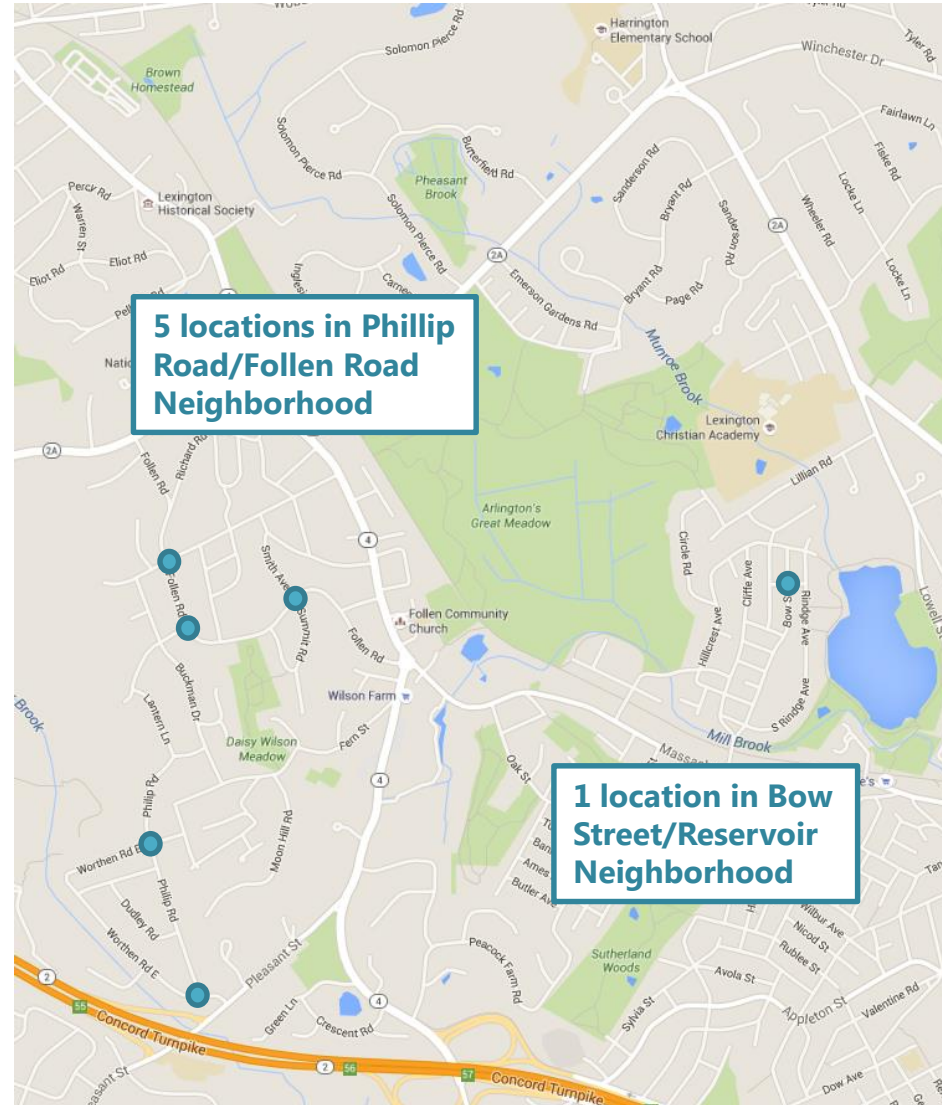


Phillip Road Goffe Road to Worthern Road



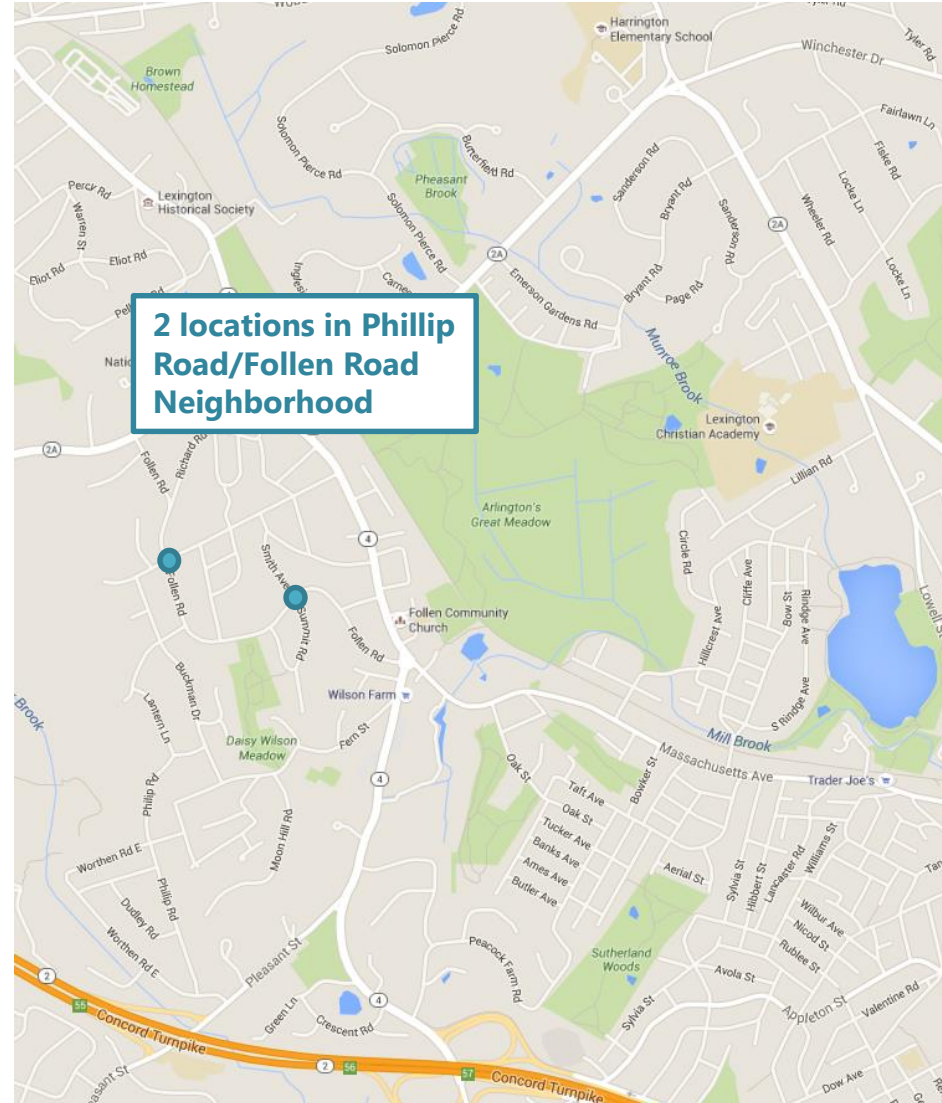
Raised Intersections

- Can reduce vehicular speeds and vehicular “cut-through” traffic
- Can increase awareness of intersections and non-motorist crossings
- May impact drainage, maintenance activities, property, emergency vehicle access, and increase noise
- Cost



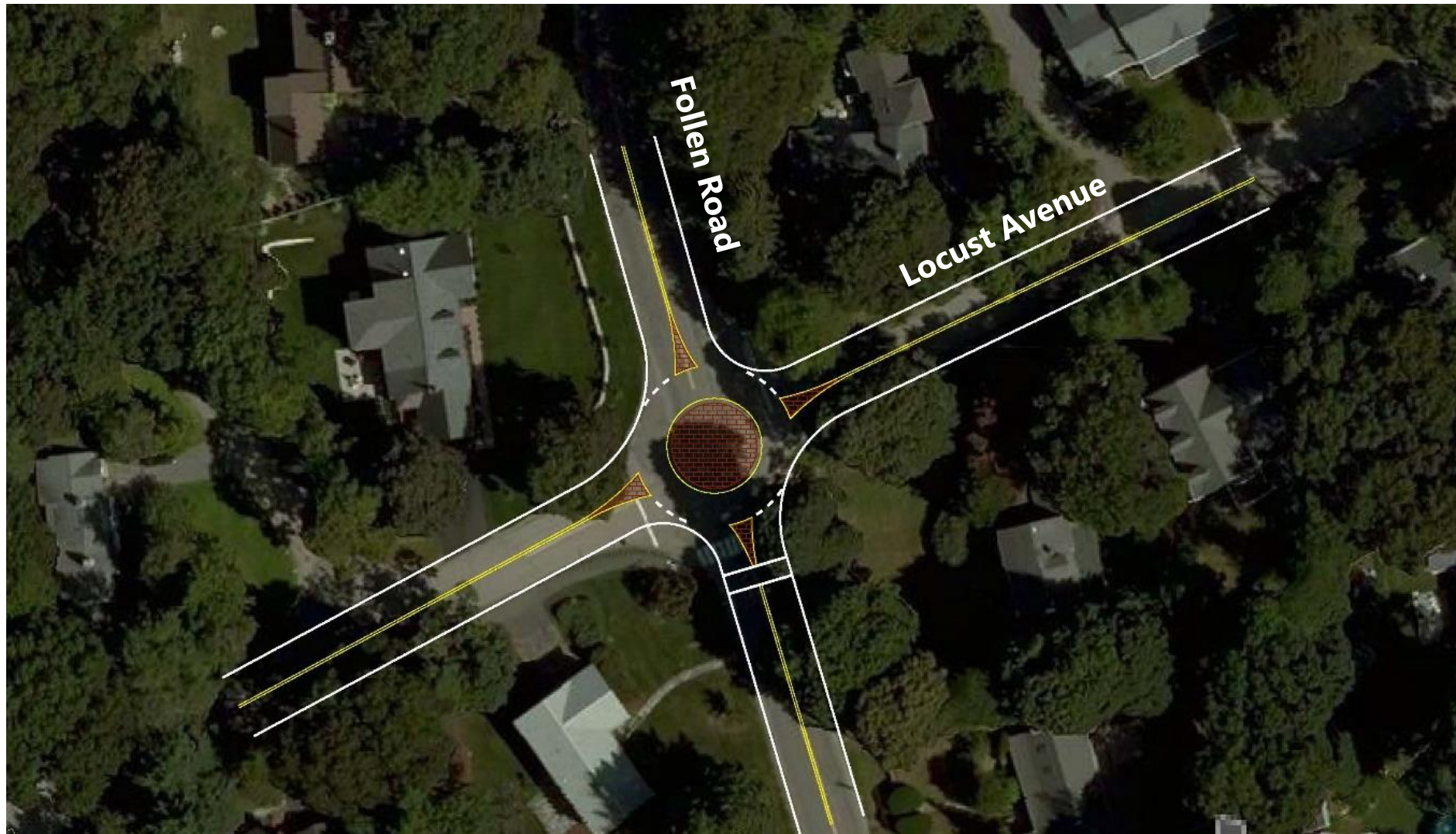
Traffic Circles

- Can reduce vehicular speeds and vehicular “cut-through” traffic
- May impact right-of-way and ease of vehicular turning movements
- Cost



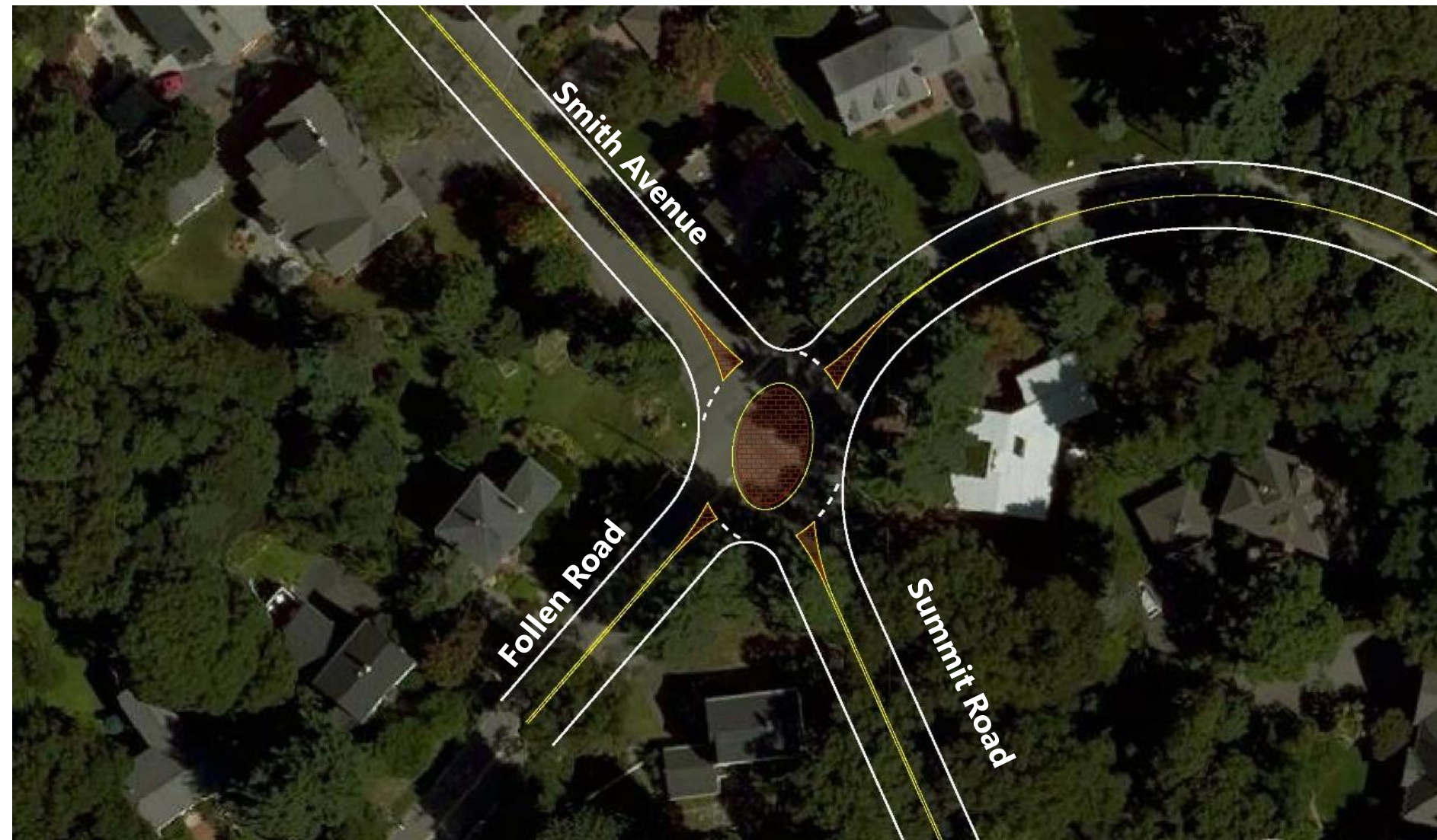
Follen Road at Locust Avenue

Source: Bing Maps 2016



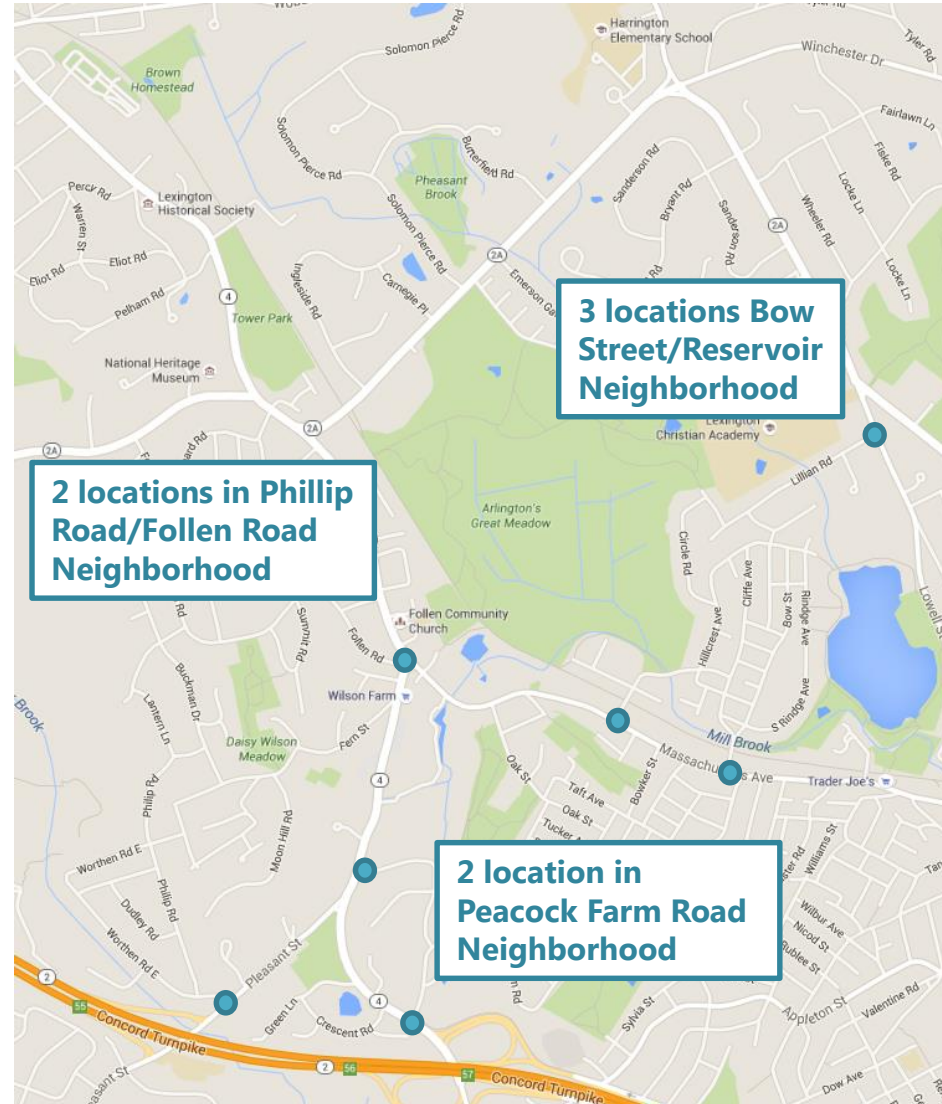
Follen Road at Smith Avenue/Summit Road

Source: Bing Maps 2016



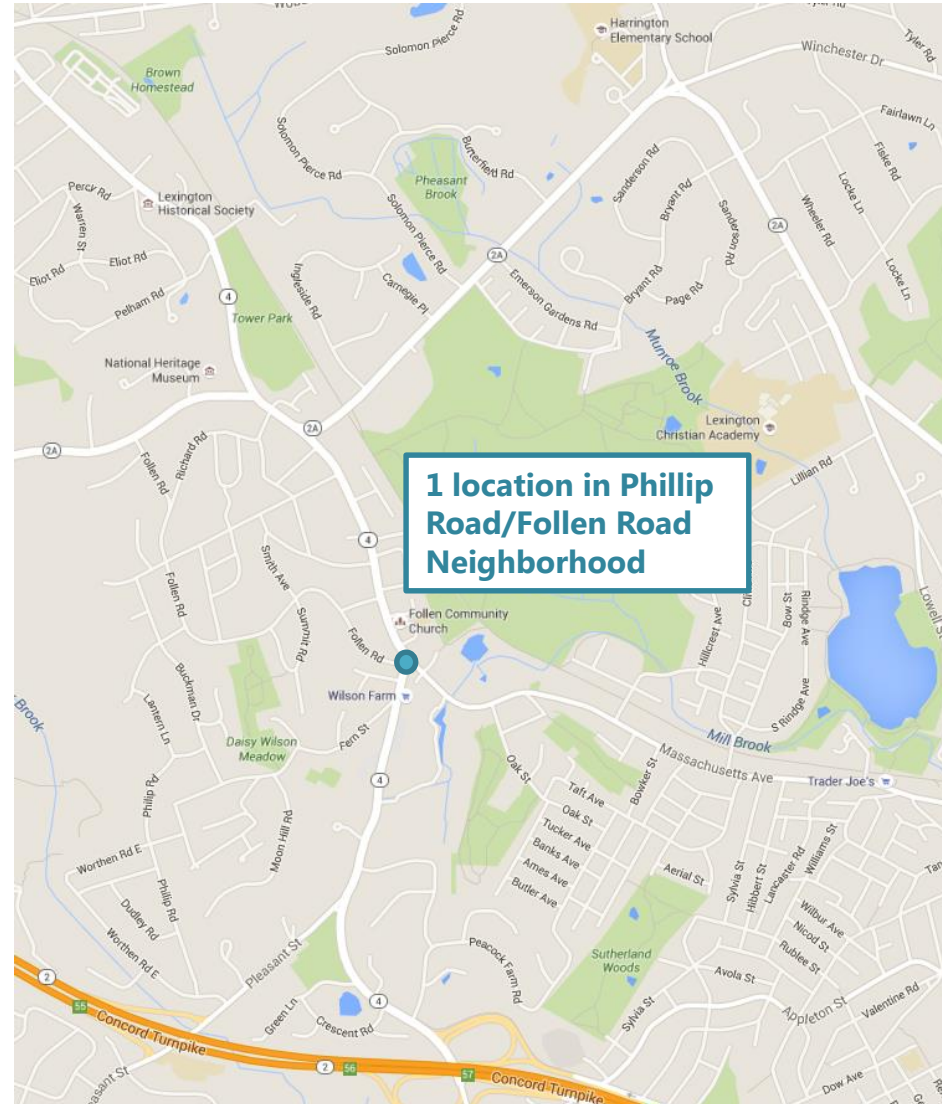
Turn Restrictions

- May reduce “cut-through” traffic, noise, and vehicle emissions
- Impacts access for residents and institutional users, and may divert traffic other neighborhood streets
- Success dependent on police enforcement



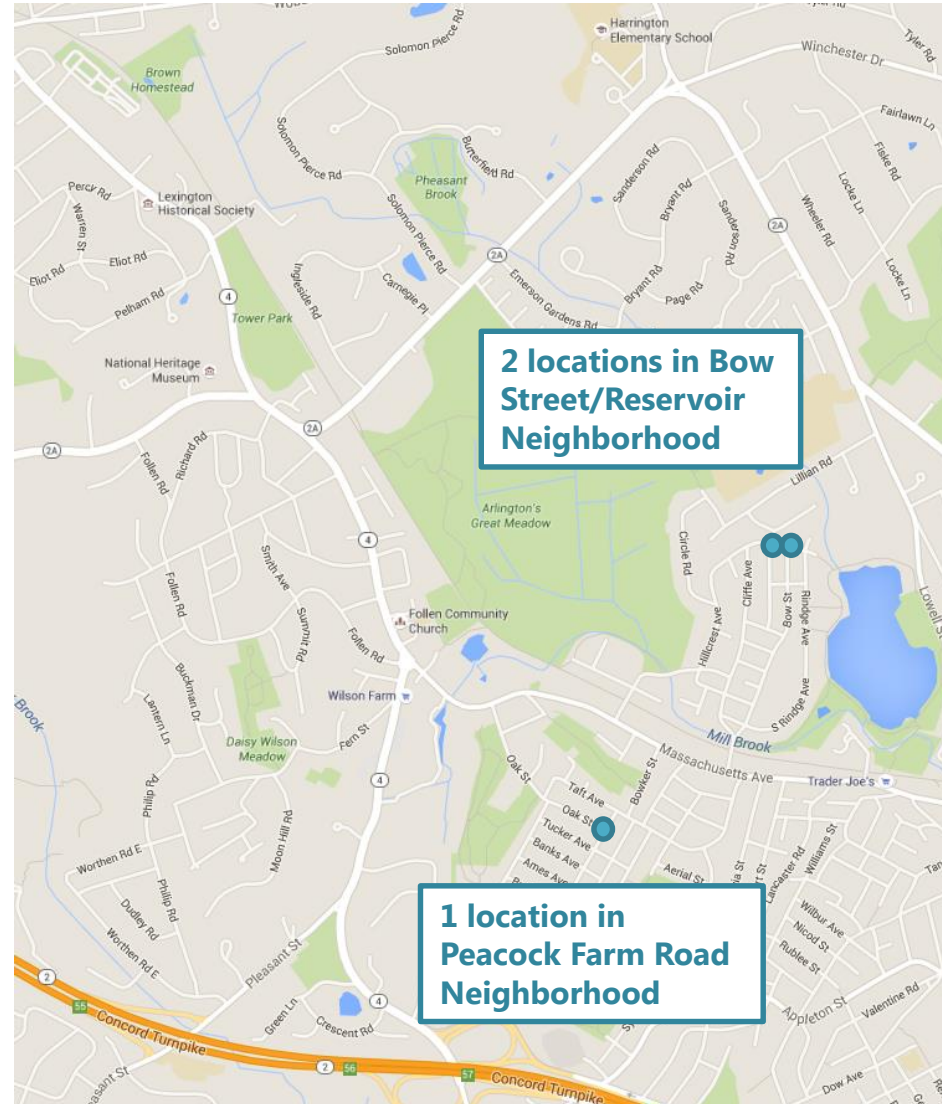
Road Closures

- Can reduce “cut-through” traffic, noise, and vehicle emissions
- Can create a friendlier pedestrian environment
- Impacts access for residents, institutional users, and emergency vehicles, and may divert traffic other neighborhood streets



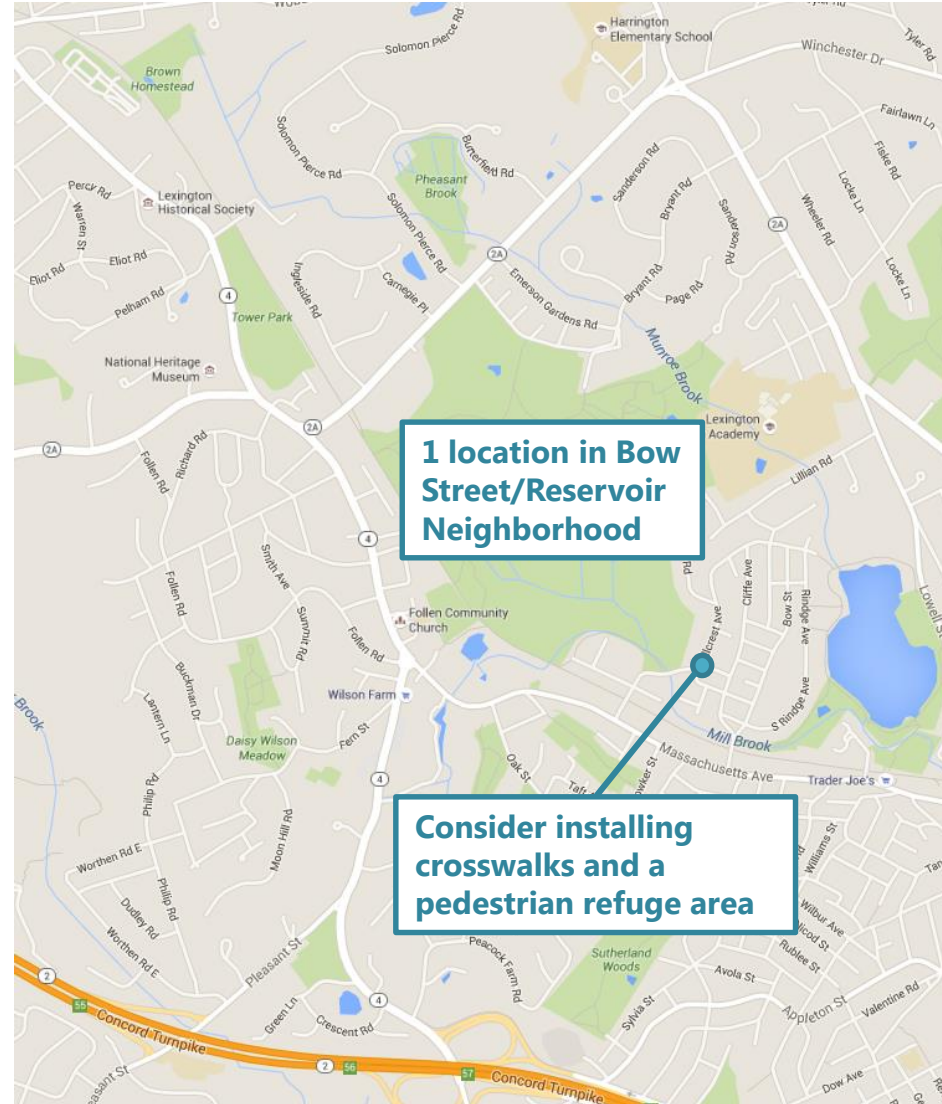
Stop Signs

- Helps increase awareness of the intersection
- Installation dependent on meeting criteria outlined by federal and state guidelines
- Tends to increase noise and vehicle emissions due to excessive starting and stopping



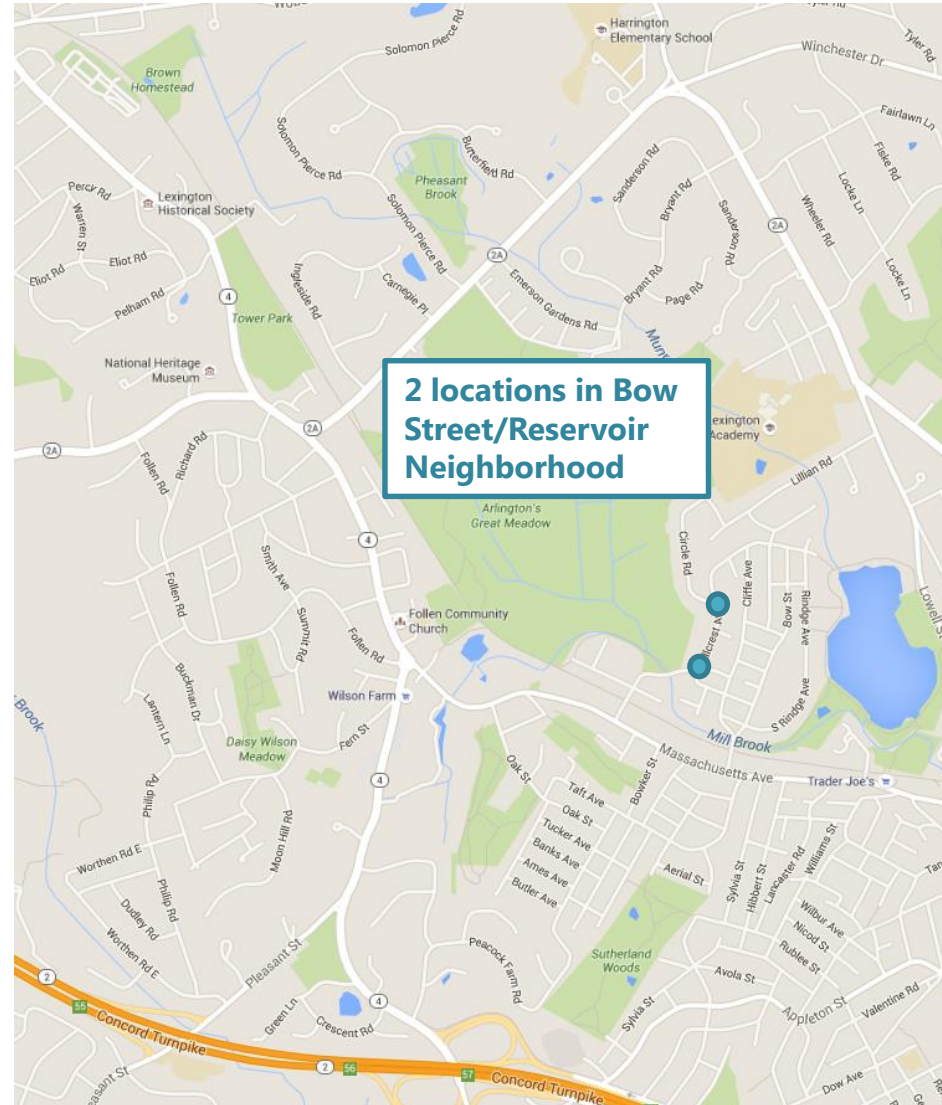
Pedestrian Accommodations

- Increases awareness of non-motorist crossings
- Advanced warning signage should be installed with crosswalks as outlined by federal and state guidelines
- Pedestrian refuge areas (student bus stop location(s)) may have property impacts and increased maintenance



Reduced Intersection Radii

- Can help control vehicular speeds



Construction Mitigation

- Develop construction mitigation plan
- Share with the public prior to construction activities
- Could include one or more of the following:
 - Installing temporary signage
 - Stationing police details along the corridor to help control traffic
 - Requiring regular coordination meetings

Dave Cannon | dcannon@lexingtonma.gov | 781.274.8323

Laura Castelli, Tracie Lenhardt, VHB

If you have additional questions or comments, please contact:

transpsafety@lexingtonma.gov



Offices located throughout the east coast